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Evolving Health Guidelines: How Do Consumers Fare While Science Marches On?

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The press is replete with guidelines regarding preventive behaviors, such as exercise, vitamins, or food choices. Such guidelines may have unintended negative effects on consumers if later reversed. We report a study examining the effect of evolving health guidelines on consumers' initial response and critical "spillover" outcomes—consumers' faith in health guidelines in general and consumers' intention to perform related health behaviors not part of the guideline. We find that a guideline change from taking an action to inaction increases negative spillovers, consistent with omission bias and betrayal aversion. A follow-up experiment with policy implications for mitigating this undesired backlash will also be reported.

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SYMPOSIA SUMMARY

Health Communication and Consumer Action: Promise and Pitfalls

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SESSION OVERVIEW

From news reports on the radio, television, internet, and magazines to focused health campaigns targeting susceptible groups, consumers are bombarded with health messages produced by ongoing medical studies, government agencies, for-profit health and insurance firms, and community and public health non-profits. A Google search of "health" produced 939,000,000 hits, "nutrition" produced 148,000,000 hits, and the specific phrases "health news" (6,140,000) and "health communications" (651,000) produced a sizable number of hits. These numbers suggest that health messages are a fundamental part of the mosaic of communications consumers encounter every day and constitute a key component of campaigns designed to reduce morbidity and mortality. These numbers and other indicators also point to trends involving increased consumer responsibility for their own care and shifts in medical culture from paternalism towards informed consent. Despite these positive forces, most health communications produce low compliance and rather dismal results.

Most health communications are undertaken to alter consumer action. Conventional wisdom is that if health communications are sufficiently informative and persuasive (increasing knowledge, efficacy, or motivation), then appropriate action will follow. This session's papers challenge this wisdom. The first two papers sharpen our understanding of how to use health communication to alter consumer action; the second two papers point to important downstream problems occurring after consumers are motivated to act.

Anand Keller and Lehmann report a meta-analysis of 85 health communications studies. They find that message factors, not individual differences or context, dominate explanations of effectiveness. They also show important differences in effects on attitudes toward health behaviors and intentions to change behaviors that may critically influence whether we judge a campaign to be successful or not. Their research underscores the importance of conceptualizing and measuring consumer action (rather than simply consumer attitudes) as a key health communication goal. The second paper, by Anand Keller, extends this theme of the focal nature of consumer action by using mental simulation of health-promoting actions as a focus of intervention. She challenges the current idea that hope and confidence produce more preventive health behaviors and suggests that increasing consumer anxiety is more effective by producing higher need for action taken to regain control.

The third and fourth papers illustrate complementary difficulties in using health communication to alter action. Moorman, Luce, and Bettman argue that consumers may not always benefit from the evolving nature of health guidelines. As medical science sheds more light on the effect of healthy choices or treatment options, communications that initially advocate positive actions (e.g., take a vitamin supplement) but later reverse these suggestions may ultimately degrade consumers' view of health guidelines and decrease their likelihood of performing related health behaviors. Tanner shows that teens may provide inaccurate reports of actions related to risky behaviors when participating in the evaluation of community-based health programs. Inaccuracy is particularly problematic when teens are made aware of desirable health behaviors,

when they believe their anonymity may not be protected, or when minimizing, not exaggerating, certain behaviors.

Looking across papers, we see several emerging questions regarding the promise and pitfalls of using health communications to alter health behavior: (1) Do health communications work in the short and long-term? (2) What types of message factors are most predictive of health communication effectiveness? (3) How does the choice of evaluation approach influence the results obtained from health communication campaigns?

EXTENDED ABSTRACTS

"Designing Effective Health Communications: A Meta-Analysis of Experimental Results"

Punam Anand Keller, Dartmouth College

Donald R. Lehmann, Columbia University

Introduction

The massive costs of health care (1.7 trillion and counting) as well as the problems posed by various diseases (e.g., AIDS, obesity, diabetes, mental illness) are well documented (Connolly 2004). People worry more about their personal health care costs than losing their jobs or being a victim of a violent crime or terrorist attacks (Gurchiek 2005). To reduce health costs as well as health-related stress, the emphasis is shifting to the promotion of prevention and detection behaviors. As a consequence, massive efforts to improve knowledge about detection, prevention, and treatment continue to be undertaken.

Unsurprisingly, numerous studies have assessed the impact of different communication strategies (e.g. level of fear arousal or framing) on subjects' attitudes toward and intentions with respect to various health behaviors. However, the large number of studies and the variability of the findings suggest a quantitative synthesis of this area would be beneficial. The purpose of this paper, therefore, is to assess the current state of knowledge in the field via meta-analysis. In particular, we wanted to identify the context, message and individual factors that increased attitudes and intentions to comply with the recommended health behaviors. For that purpose, we conducted a meta-analysis on data reported in 85 published and unpublished articles in the consumer research, psychology, health, and communications literatures.

Overview of the Study

We examined studies that measured the effectiveness of health communications by assessing attitudes towards the recommended health behaviors and/or intentions to comply with advocated health behaviors. Twenty-two study characteristics reported in the 85 papers were identified as potential determinants of attitudes and intentions in response to health communications. These characteristics were divided into three categories: (i) Context (3 types), (ii) Message (14 types), and (iii) Individual differences (5 types). The results indicate a variety of message factors can be used to enhance attitudes, e.g., base (i.e., statistics) or case (a story about a real or fictitious individual) information, an emotional appeal, and strong arguments for why one should undertake the advocated health actions. Some of the most influential variables for increasing

intentions are case information, emphasizing social consequences (e.g., effect on loved ones), and advocating detection behavior. Intentions also depend on a number of context and individual differences including high perceived severity, response efficacy, and self-efficacy. Looked at more closely, the results have some interesting aspects which bear further discussion.

Results: Attitudes versus Intentions

Results indicate that message factors explain more of the variance in attitudes than context characteristics or individual differences. By contrast, message factors explain about the same variance in intentions as individual differences and both explain more than context factors. Put differently, while message factors are more important than individual differences which in turn are more influential than the context factors we studied, the relative impact of message factors is greater for attitudes than intentions. In general, we seem to have more control over attitudes than intentions. Message communications are key to attitude formation, but individual and context differences compete with message factors in determining intentions to comply with the message recommendations.

Importantly, with one exception (the use of cases or stories), the five characteristics that best explain attitudes do not overlap with the five factors that most influence intentions. People seem comfortable forming positive attitudes towards healthy behaviors, but their intentions are lower when faced with these choices. Not surprisingly, lab studies are associated with more positive attitudes but lower intentions. While several message factors have a significant effect on attitudes or intentions, only three have similar effects (case information and multiple exposures have positive effects, using a male communicator has a negative effect).

Why might someone have positive attitudes toward the behavior yet not form intentions to comply with the behavior? According to the Theory of Reasoned Action (TRA), intentions are a function of attitude toward the behavior and subjective norms or social pressures regarding the performance of the behavior (Fishbein and Ajzen 1975). However, the TRA is based on the assumption that humans act rationally and that the behavior is under complete volitional control of the individual. In practice, however, individual differences (e.g., ability, motivation, knowledge, emotions) and context factors (e.g., social support, convenience) undermine volitional control (van Hooft et al. 2005).

Although attitudes and intentions have been disconnected in the past literature (Chandon, Morwitz, and Reinartz 2005; Chatzisarantis et al. 2004), our findings that attitudes and intentions have different antecedents is news. One explanation may be that health recommendations can result in conflict between health and non-health goals. For example, use of sunscreen may be viewed as an effective way to reduce the risk of skin cancer, but negatively related to looking attractive with a tan. Similarly, eating fish may be positively related to a health goal, but negatively related to the comfort goal met by meat loaf. Our findings also suggest that intentions may reflect tradeoffs across health and other behaviors, whereas attitudes may be formed in the context of a particular health behavior. In particular, the finding that self-efficacy influences intentions, but not attitudes, suggests that even if response efficacy is high, people are not willing to consider undertaking the behavior if they don't believe they can. They may, however, compensate by engaging in other behaviors related to health or even more abstract goals. For example, a poor diet may be compensated for by increased exercise and/or volunteer work to meet the goal of making one feel good about oneself.

References

- Connolly, Ceci (2004), "Higher Costs, Less Care," *The Washington Post*, September 28, p. A01.
- Chandon, Pierre, Vicki G. Morowitz, and Werner J. Reinartz (2005), "Do Intentions Really Predict Behavior? Self-Generated Validity Effects in Survey Research," *Journal of Marketing*, 69 (2), 1-14.
- Chatzisarantis, Nikos L. D., Martin S. Hagger, Brett Smith, and Cassie Phoenix (2004), "The Influences of Continuation Intentions on Execution of Social Behaviour Within the Theory of Planned Behaviour," *British Journal of Social Psychology*, 43 (4), 551-583.
- Fishbein, Martin and Icek Ajzen (1975), "Bayesian Analysis of Attribution Processes," *Psychological Bulletin*, 82 (2), 261-277.
- Gurchiek, Kathy (2005), "Health Contributions Tied to Workers' Pay," *HRMagazine*, 50 (2), 28-29.
- Van Hooft, Edwin A.J., Marise Ph. Born, Toon W. Taris, Henk van der Flier, and Roland W.B. Blonk (2005), "Bridging the Gap Between Intentions and Behavior: Implementation Intentions, Action Control, and Procrastination," *Journal of Vocational Behavior*, 66 (2), 238-256.

"The Role of Need for Control in Effective Health Communication"

Punam Anand Keller, Dartmouth College

Introduction

Several goals may drive the design of health communications. However, more often the underlying purpose is to enhance prevention, detection and/or remedial behaviors. This paper examines the effectiveness of message frames for influencing preventative health behaviors among people who would like to, but cannot change their behavior. The framing literature indicates that a negatively-framed message is likely to lead to more favorable attitudes than a positively-framed message when it is uncertain that the recommended behavior will lead to the desired health outcome (Rothman and Salovey 1997). For example, a negatively-framed mammogram message (e.g., if you don't get a mammogram, you will not detect breast cancer early) will lead to more favorable attitudes towards mammograms than a positively-framed message (if you get a mammogram, you will detect breast cancer early) when it is uncertain mammograms are an effective means of detecting breast cancer (Block and Keller 1995; Meyerowitz and Chaiken 1987; Rothman et al. 1993). These findings suggest the differential advantage of negative over positive frames on behavior is rather limited since one is unlikely to get a mammogram if they are perceived as relatively ineffective. The literature also sends mixed messages for choosing message frames for prevention behavior if the audience is highly involved. On one hand, positive frames are recommended over negative frames for prevention behaviors (Rothman and Salovey 1997). On the other hand, negative frames are recommended over positive frames when people are already concerned about the issue (Maheswaran and Meyers-Levy 1990).

This study seeks to answer two questions: What is the effect of frame on behavior, especially for prevention behaviors among involved audiences? And other than uncertainty or low response efficacy, is there an alternative mediator to understand the message frame-behavior relationship in this context? The literature on emotion-based appraisal is used to predict that anxiety-producing negative frames result in more healthy preventative behaviors than hope-inducing positive frames because negative frames increase need for control (Raghunathan and Corfman 2004, 2006; Roseman Wiest, and Swartz 1994).

Study and Results

This hypothesis was tested in three experiments. Each of the experiments was divided into three phases. In phase 1, participants were exposed to a framed health message encouraging behavior change. In phase 2, participants were given an opportunity to engage in the behavior. Extent of planning and behavioral compliance was measured in phase 3. All three experiments used undergraduate participants who wished a-priori to reduce alcohol consumption, but stated they could not meet this goal.

Results support the premise that need for control mediates the relationship between message frames and prevention behavior among audiences with unfulfilled goals. The findings also demonstrate that messages that produce anxiety and enhance need for control are more effective than messages that evoke hope. Effectiveness is measured by self-reports on pre-behavior measures (extent of planning), behavior (alcohol use) and post-behavior measures (productivity and extent of control over future alcohol use).

The findings also address the role of behavioral recommendations and consequences in framed health communications. Most of the extant health communications focus on health consequences rather than detailed action steps. The present findings indicate that this message format will be effective as long as the health message enhances need for control. However, unaided planning is unlikely when the audience is not motivated. In these cases, it might be more effective to include detailed action steps (experiments 1 and 2). Together these findings suggest that the "if" aspect of message frames (action steps) may be more valuable than the "then" aspect (consequences).

Results highlight the mediating role of need for control. However, the need for control may be satisfied by the situation rather than personal control. Gollwitzer (1999) suggests that implementation planning often transfers control from the individual to the situation. For example, taking vitamins at noon transfers the control from the person to the situation (noon time). One inference from our results is that hope may prompt relinquishment of personal and situational control, thus explaining the absence of planning and behavior change. Future research is needed on the relationship between feelings and multiple dimensions of need for control.

The premise that feeling hopeful is not an effective means for goal attainment is not necessarily at odds with the view that self-efficacy or one's perceived ability to perform the advocated behavior successfully is the key predictor of behavior change (Ajzen 2000; Bandura 1982; Keller 2006; Maddux and Rogers 1983). The present study suggests that the influence of efficacy beliefs on attitudes versus behavior may depend on the specificity of the belief. One may be confident that one can quit smoking, but may have more doubts about specific action steps such as increasing food intake in response to increased hunger, wearing a patch, taking fewer breaks from work etc. According to this view, perceived ability to undertake specific action steps may be better predictors of behavior than general feelings of feeling confident.

References

- Block, Lauren G. and Punam A. Keller (1995), "When to Accentuate the Negative: The Effects of Perceived Efficacy and Message Framing on Intentions to Perform a Health-Related Behavior," *Journal of Marketing Research*, 32 (May), 192-203.
- Gollwitzer, Peter M. (1999), "Implementation Intentions—Strong Effects of Simple Plans," *American Psychologist*, 54 (7), 493-503.
- Maheswaran, Durairaj and Joan Meyers-Levy (1990), "The Influence of Message Framing and Issue Involvement," *Journal of Marketing Research*, 27 (3), 361-367.
- Meyerowitz, Beth E. and Shelly Chaiken (1987), "The Effect of Message Framing on Breast Self-Examination Attitudes, Intentions, and Behavior," *Journal of Personality and Social Psychology*, 52 (3), 500-510.
- Raghunathan, Rajagopal and Kim P. Corfman (2006), "Is Happiness Shared Doubled and Sadness Shared Halved?: Social Influence on Enjoyment of Hedonic Experiences," *Journal of Marketing Research*, 43 (3), 386-394.
- _____, _____ (2004), "Sadness as Pleasure-seeking Prime, Anxiety as Attentiveness Prime: The Different Affect Different Effect (DADE) Model," *Motivation & Emotion*, 28 (March), 23-41.
- _____, _____, and Kim P. Corfman (2006), "Informational Properties of Anxiety and Sadness, and Displaced Coping," *Journal of Consumer Research*, 32 (March), 596-601.
- Roseman, Ira J., Cynthia Wiest, and Tamara S. Swartz (1994), "Phenomenology, Behaviors and Goals Differentiate Discrete Emotions," *Journal of Personality and Social Psychology*, 67 (2), 206-221.
- Rothman, Alexander J. and Peter Salovey (1997), "Shaping Perceptions to Motivate Healthy Behavior: The Role of Message Framing," *Psychological Bulletin*, 121 (1), 3-19.
- _____, _____, Carol Antone, Kelli Keough, and Chloe D. Martin (1993), "The Influence of Message Framing on Intentions to Perform Health Behaviors," *Journal of Experimental Social Psychology*, 29 (5), 408-433.

"Evolving Health Guidelines: How Do Consumers Fare While Science Marches On?"

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Introduction

Scientific advances in healthcare present important opportunities for disease prevention and treatment, but reaping the full benefit of these advances is often complicated by consumer reactions. The press is replete with reports of medical researchers gaining new insights into the effects of preventive health behaviors such as exercise, vitamins, cancer screening, and food consumption and the effects of alternative medical treatments (e.g., prescriptions, surgical procedures, mental health regimens). As science advances, preventive guidelines must evolve—sometimes even contradicting prior guidelines. Such advancements are vital to health care improvements. However, consumers adopting health guidelines may be resistant to change; the evolving nature of guidelines may influence adopters' confidence in recommendations and their willingness to adopt them. From the individual consumer's perspective, evolving guidelines on mammography, HRT, or nutrition, for example, may have unintended and unfortunate outcomes, including losing faith in guidelines, avoiding any proactive approach to healthcare, and feeling hopeless. In short, consumers may feel that evolving guidelines give them a reason to ignore even well-validated preventive health behaviors.

We examine the effect of evolving health guidelines on consumers' reactions to the information in the guideline and on two critical "spillover" outcomes—consumers' faith in health guidelines in general and consumers' intention to perform related health behaviors not specified as part of the guideline. We predict that consumers will have a positive reaction to initial new guidelines in

an area and that such initial guidelines will appropriately affect intention to monitor the behavior noted in the guidelines. However, in the presence of updated scientific information that changes the guideline, we predict that consumers may be less positive. Specifically, we predict consumers will react differently to two types of changing guidelines. The first type, positive-negative, first recommends a behavior for its positive impact but then, in the update, suggests that new research has identified a negative impact for the same behavior. The second type, negative-positive, suggests the opposite and is likely to be less upsetting for consumers. Consistent with work on omission bias (actions are judged more harshly than normatively equivalent omissions, Spranca, Mintz, and Baron 1991) and betrayal aversion (particularly strong emotional reactions when a protective action turns harmful, such as when airbags mandated for automobiles actually hurt occupants, Koehler and Gershoff 2003) we expect consumers to react particularly negatively to being told they should adopt an ostensibly positive behavior, only to be later told that the behavior is in fact negative or harmful. As science marches on with positive-negative updates, we predict that consumers will form negative impressions of the information-value of health guidelines overall and that they will also be less likely to perform unrelated spillover health behaviors.

Study and Results

We test our ideas with health information presented through mock newspaper articles. In our study, we formulated guidelines regarding use of pyridoxine (vitamin B6) as a nutritional supplement. An adult community sample initially read either "positive" information supporting use of the supplement or "negative" information warning of dangers of overuse. In both cases, pyridoxine was described as having an effect on the heart (e.g., negative-dangerously irregular heart beat, which can increase the likelihood of fatal heart disease). Half the participants responded to dependent measures after this initial information. The other half was presented with information reversing their initial guideline (e.g., half of the sample who initially read positive information was subsequently told that this information had been revised to be negative, suggesting dangers from overuse. Thus, our design manipulated (between-subjects) the valence of the initial guideline (positive action towards pyridoxine versus negative information suggesting avoidance) and the presence or absence of a reversal. Finally, a control group indicated intentions in the absence of a specific guideline regarding pyridoxine; they were told only that it had recently been covered in the press.

Relative to control, groups receiving a pyridoxine guideline at time 1 reported a positive emotional reaction to the presence of the guideline and an increased likelihood of monitoring pyridoxine levels. However, upon receiving updated guidelines, either negative-positive or positive-negative, consumers reduced intention to monitor pyridoxine, even though the guideline would suggest, from either a positive or negative perspective, that it would be helpful. Most importantly, we found a backlash spillover effect concentrated in those participants who were initially instructed to increase pyridoxine usage (positive) and later were told that they should decrease usage (negative). These participants reported reduced faith in health guidelines in general and also reduced intentions to engage in unrelated heart-healthy behaviors (e.g., cholesterol monitoring, blood pressure monitoring). Specifically, these participants show lowered evaluation and intention behaviors as compared to the negative-positive change group and to the no-change and holdout control groups. Thus, we have isolated one particular type of backlash to guideline change.

References

- Koehler, Jonathan J. and Andrew D. Gershoff (2003), "Betrayal Aversion: When Agents of Protection Become Agents of Harm," *Organizational Behavior and Human Decision Processes*, 90 (2), 244-261.
- Spranca, Mark, Elisa Minsk, and Jonathan Baron (1991), "Omission and Commission in Judgment and Choice," *Journal of Experimental Social Psychology*, 27 (1), 76-105.

"Evaluating Health Communication Effectiveness: Truth-Telling and the Measurement of Adolescents' Sexual Activity"

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Introduction

Although federally-sponsored health campaigns are increasingly required to demonstrate impact (e.g., Community-Based Abstinence Education (CBAE) grants require 15% of the budget to be spent on evaluation), evaluations of such campaigns may be fraught with biased responding. Participants' accuracy in reporting health-risk behaviors is particularly problematic. One study found that 25% of male middle school students, compared to 15% of girls, overstated their sexual experience (Seigel, Alen, and Roghmann 1998). Rosenbaum (2006) also noted systematic patterns of inaccurate responding in the National Longitudinal Study of Adolescent Health. Teens who pledged abstinence were more likely to recant their sexual history, claiming to be virgins in the post-pledge survey in spite of reporting being non-virgins in the pre-pledge survey.

We use self-evaluation maintenance (Tesser and Paulhus 1983) and impression management (Paulhus 1984) theories to explain when, to what degree, and in what direction teen subjects may lie when reporting the health-risk behavior of teenage intercourse. In this case, self-identity may be tied up with the risky behavior. Health campaigns require comparing self to a recommended behavior, which can lead to lying if comparisons are negative (Tesser and Paulhus 1983; Argo, White, and Dahl 2006). Impression management, however, suggests that subjects may sometimes cope by hiding their identity on post-campaign evaluations.

Experiments

Three experiments were conducted using data from two saturation health campaigns promoting abstinence via in-school programming and multi-media advertising. In all experiments, subjects were exposed to campaigns promoting sexual abstinence in class and via multi-media advertising.

The goal of study 1 was to determine the degree to which identity protection occurs when presented with an ideal behavior. Using data from an evaluation survey of a CBAE grant, a dummy variable was created reflecting whether the birthday provided by the subject did or did not appear accurate. An (in)accurate birthday was comprised of a (in)valid month, date, and year for the age that was reported. This method assumes that an incorrect birthday is due to "hiding" and not inability to follow directions communicated in writing and verbally with examples by administrators. There were 1734 pre-campaign and 1960 post-campaign surveys from 7th-9th graders. Pre-to-post comparisons indicate no differences in the percentage of students "hiding" or providing inaccurate birthdates. 7th grade girls are more likely to hide than 7th grade boys; there were no other gender differences. Hiders are more likely to report intentions to engage in sex and consume drugs for 7th and 8th graders, with no significant differences among 9th graders. Hiding

was not a function of the campaign, but may have still been due to comparison to an ideal based on the activity reported by hidiers.

Experiment 2 examined the degree to which reports of activity or identity were altered when presented with the ideal. The experiment was a 2 (tracking information order, first or last) x 2 (test timing, pre-campaign vs. post-campaign) between-subjects design utilizing a CBAE campaign promoting sexual abstinence. Based on impression management theory, an interaction of these two factors on accuracy was predicted. Specifically, inaccuracies of either type (hiding or lying) should be highest when subjects are aware they are being tracked and when they have been exposed to the "ideal" (i.e. following the campaign). Subjects were 521 ninth graders randomly assigned to the four conditions. Results indicate no difference in hiding, sobriety intentions, or sex intentions for either of the main effect conditions. There was, as predicted, a tracking information order X test timing interaction, but only for lying and not hiding. Post-test, tracking-first subjects were more likely to report being virgins and less likely to report intentions to remain sober. Being exposed to the campaign increases lying about one's virginity status when one knows that identity is being tracked, even though the survey was anonymous. Hiding was not influenced by exposure to the campaign or the position of tracking information.

Experiment 3 sought to determine the direction of impression management. Subjects were randomly assigned to this study from a larger CBAE project and exposed to the campaign. 2309th graders responded in the pre-test and 220 in the post-test. Teens were asked to agree/disagree with "I exaggerated how much sex I've had on this survey" (exaggerating) and "It is important that my school look good (show less sex) on this survey" (minimizing). Exaggerating appears to remain constant, pre-to-post, suggesting that lying may occur in comparison to ideals held by other potential impression targets such as peers. However, minimizing increases when exposed to the health campaign, consistent with self-evaluation maintenance. In addition, those who said they exaggerated did report greater sexual activity and intentions to engage in such activity while those who said it was important for the school to look good reported less activity and lower intentions.

References

- Argo, Jennifer J, Katherine White, and Darren W. Dahl (2006), "Social Comparison Theory and Deception in the Interpersonal Exchange of Consumption Information," *Journal of Consumer Research*, 33 (June), 99-108.
- Paulhus, Delroy L. (1984), "Two-Component Models of Socially-Desirable Responding," *Journal of Personality and Social Psychology*, 46 (3), 598-609.
- Rosenbaum Janet E. (2006), "Reborn a Virgin: Adolescents' Retracting of Virginity Pledges and Sexual Histories," *American Journal of Public Health*, 96 (6), 1098-1103.
- Siegel, David M, Marilyn J. Aten, and Klaus J. Roghmann (1998), "Self-Reported Honesty among Middle and High School Students Responding to a Sexual Behavior Questionnaire," *Journal of Adolescent Health*, 23 (1), 20-28.
- Tesser, Abraham and Delroy L. Paulhus (1983), "The Definition of Self: Private and Public Self-Evaluation Management Strategies," *Journal of Personality and Social Psychology*, 44 (4), 672-682.